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Title : Catch rate of bottlenose dolphins feeding from a Sea Eagle II Bycatch Reduction Device

Category : Behavior

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Abstract : It is often hypothesized that bottlenose dolphins, Tursiops truncatus, observed behind trawling shrimp boats are feeding. However, specific feeding behaviors have not been described or quantified due to water clarity and depth. Underwater video obtained while monitoring behavioral responses of fish and shrimp to the Sea Eagle II, an experimental Fish Eye Bycatch Reduction Device (BRD), documented bottlenose dolphins feeding on fish escaping the trawl through this device. Specifically, a dolphin would station itself over the BRD exit hole and grab a fish as it exited the hole. Occasionally a dolphin would stick its beak into the BRD. We examined 122 minutes of videotape taken of a towed shrimp net with a Sea Eagle II BRD. 16 feeding bouts were observed with a total duration of 26 minutes 54 seconds, with an average duration of 1 minutes 16 seconds (range=11 seconds to 4 minutes 53 seconds). Number of fish caught within a feeding bout varied with the number of fish exiting the BRD which was influenced by net surges. More fish exited the BRD with surges, than when the net did not surge. Dolphin spent an average of one minute 24 seconds at the BRD when fish were present and only 17 seconds when they were not. 742 fish escaped the BRD, 40% of which escaped while a dolphin was present at the BRD. Due to the limited camera angle we only observed 42 fish caught by dolphins. For dolphins observed catching fish, the average time to catch one fish was 29 seconds. The shrimping industry is required by NMFS to use at least one BRD per net. This requirement, in conjunction with the number of nets trawled and duration of each trawl, results in a potential increase in foraging efficiency for dolphin that adopt this BRD behavior.